

## WHAT IS CLAIMED IS:

1. A housing for receiving a bearing component comprising:  
a shaft projection including a groove profile prepared according to a deformation process;  
a hollow section including an end area with a recess,

said shaft projection being inserted into said recess and pressed together with said end area.

2. A housing for receiving a bearing component in accordance with Claim 1, wherein said deformation process includes a forging operation.

3. A housing for receiving a bearing component in accordance with Claim 1, wherein said deformation process includes a forging operation and an operation for introducing residual compressive stresses into the boundary layer of said groove profile.

4. A housing for receiving a bearing component comprising:

a shaft projection including a groove profile prepared according to an original shaping

process;

a hollow section including an end area with a recess,

5. said shaft projection being inserted into said recess and being pressed together with said end area.

5. A housing for receiving a bearing component in accordance with Claim 4, wherein said original shaping process includes a casting operation.

6. A housing for receiving a bearing component in accordance with Claim 4, wherein said groove profile has residual compressive stresses in its boundary layer after said original shaping operation.
7. A housing for receiving a bearing component comprising:
  - a shaft projection including a groove profile prepared according to a deformation process or an original shaping process, said groove profile further comprising a plurality of depressions arranged next to each other in an axial longitudinal direction of said shaft projection and distributed in a circle segment-like pattern over circumference of said shaft projection;
  - a hollow section including an end area with a recess, said shaft projection being inserted into said recess and being pressed together with said end area.
8. A housing for receiving a bearing component in accordance with Claim 7, wherein said circle segment-like pattern has angular extension characteristics in the range of  $80^\circ$  to  $140^\circ$ .
9. A housing for receiving a bearing component in accordance with Claim 7, wherein three to eight of said depressions are arranged next to each other in axial longitudinal direction of said shaft projection.
10. A process for manufacturing a housing for receiving a bearing component, the process comprising the steps of:
  - forming a housing in a deformation operation to include a shaft projection with a groove

profile arranged at said shaft projection;

5        providing a hollow section with a recessed end area; and

      inserting the shaft projection into the recessed end area and pressing the shaft projection together with the recessed end area.

11. A process for manufacturing a housing in accordance with Claim 10, said process further comprising the step of:

      forging said groove profile during said deformation operation.

12. A process for manufacturing a housing in accordance with Claim 10, said process further comprising the steps of:

      forging a groove profile during said deformation operation; and

      introducing residual compressive stresses into boundary layer of said groove profile.

13. A process for manufacturing a housing for receiving a bearing component, the process comprising the steps of:

      forming a housing in an original shaping operation to include a shaft projection with a groove profile arranged at said shaft projection;

5        providing a hollow section with a recessed end area; and

      inserting the shaft projection into the recessed end area and pressing the shaft projection together with the recessed end area.

14. A process for manufacturing said housing in accordance with Claim 13, further comprising a step of:

10 casting said groove profile during said original shaping operation.

15. A process for manufacturing said housing in accordance with Claim 13, further comprising the steps of:

casting said groove profile during said original shaping operation; and  
introducing residual compressive stresses into boundary layer of said groove profile.

15 - 16. A process for manufacturing said housing in accordance with Claim 13, further comprising the steps of:

casting said groove profile during said original shaping operation; and  
introducing residual compressive stresses into boundary layer of said groove profile  
including a shot peening process.

17. A process for manufacturing said housing in accordance with Claim 13, further comprising the steps of:

casting said groove profile during said original shaping operation; and  
introducing residual compressive stresses into boundary layer of said groove profile  
including a cold calibration process.